

79
4
3
JUN 2 1938

ARBORETUM BULLETIN
OF THE
ASSOCIATES

OCTOBER, 1937



THE
MORRIS ARBORETUM
OF THE
UNIVERSITY OF PENNSYLVANIA

VOL. 2 No. 9

MORRIS ARBORETUM
CHESTNUT HILL
PHILADELPHIA, PA., U.S.A.

THE MORRIS FOUNDATION
Maintaining THE MORRIS ARBORETUM
OF THE
UNIVERSITY OF PENNSYLVANIA

Advisory Board of Managers

THOMAS S. GATES, *President*
GEORGE A. BRAKELEY
THOMAS D. M. CARDEZA
HORACE H. F. JAYNE
JOHN S. JENKS
DR. JOHN F. McCLOSKEY
C. STEVENSON NEWHALL
WHARTON SINKLER
GEORGE D. WIDENER

MAURICE BOWER SAUL, *Counsel*
WILLIAM H. RUSSELL, *Secretary*

Committee on Administration

DR. GEORGE WILLIAM McCLELLAND, *Chairman*
DEAN PAUL H. MUSSER
DEAN GEORGE S. KOYL
DR. RODNEY H. TRUE
DR. CLARENCE E. McClung
GEORGE A. BRAKELEY, *ex officio*

RODNEY H. TRUE, *Director*





THE
MORRIS ARBORETUM
OF THE
UNIVERSITY OF PENNSYLVANIA



Austrian Pine
Pinus nigra Arnold variety *austriaca*
Aschers. and Graebn.

ARBORETUM BULLETIN, OCTOBER, 1937

The tree shown in the frontispiece is a specimen of Austrian Pine growing in the Arboretum. This is one type of the very variable species—*Pinus nigra* Arnold var. *austriaca* Aschers. and Graebn.—that occurs in southeastern Europe from Austria to the Balkan Peninsula. It forms a tall tree with dark grey bark. Its very dark green, rigid leaves growing in twos are three to four inches long. The cones are not stalked, are egg-shaped in outline, yellowish-brown and glossy. They are usually two to three-and-a-half inches long, each scale ending in a very short prickle. The gray seeds are about a quarter of an inch long.

This tree is hardy in our climate, and reaches a height of 100 or even 150 feet (Bailey).

The cover illustration shows the iron weather-vane on the summerhouse in the Rose Garden at the Arboretum.

These photographs were taken by Gustave Liebscher.

RODNEY H. TRUE, Director

JUN 1 1938

BOTANY AS A HOBBY

THE SAYING that "every man should have two strings to his bow" probably originated a long while ago, but the intense life forced on people by our present mode of living calls attention to the fact that it is advisable, and indeed necessary, that some form of secondary interest should enter into the program of most of us, in order that the main job of life may be carried on successfully.

The hobby represents the "second string to the bow." Different types of interest will determine the sort of thing that a man turns to as a secondary interest.

His hobby may be collecting something—stamps, coins, medals. One of our former diplomats collected shaving bowls; one of our famous botanists collected death masks. All of these illustrate the operation of the "Sammelgeist."

To those with limited physical capability, the collecting of first editions or of engravings might offer a very genuine appeal, to which one might turn in moments of relaxation from the dominance of the job.

Many persons find their hobby in some form of physical activity. Witness the man who can hardly wait to get to his golf clubs in order to compete with "bogey." Others find their relaxation in different sorts of physical efforts. The athletic hobby has the usual advantage of taking the man out-of-doors and into the open air, with more or less physical exercise to keep his muscles in tone, and for the moment to take his attention from the regular job.

A hobby ought to furnish relaxation and a change of base for mental operations. It is preferable that fresh air and pleasant surroundings should add their zest. I think of Botany as a hobby combining all of the points just mentioned. One of the commanding figures in the iron world collects sedges, and in doing so undoubtedly gets into the open air, and finds much varied exercise in seeking his treasures in various types of surroundings. He may work in the marshes, or he may climb mountains for his Carexes. When he has found a species that he has never collected before, undoubtedly he gets a real thrill. One textile manufacturer has become an authority on ferns. A patent lawyer in New York City became one of the highest authorities on a group of the sedges. Examples of botany as a successful hobby might be multiplied.

As the hobby continues to operate, collections of plants are accumulated in many cases until the results of hours of relaxation become scientifically significant. Frequently these private herbaria find homes in some University or other institution of learning, and continue through the years to serve science and to inspire and to instruct other students and hobbyists. Thus, the objects of passing interest in hours of relaxation become permanent additions to the equipment of the world of scholarship.

What Andrew Mellon did for the present and for the future of art by collecting paintings is a recent instance of the natural course of the life history of a hobby. Our herbaria are full of similar instances illustrating a like story of botanical hobbies.

HOW TO MAKE A HERBARIUM

A HERBARIUM is a collection of plants preserved, usually by drying, for scientific study. To utilize space and to reveal the characteristics of the dry plants more clearly, the fresh specimens are put under pressure, and when dry are mounted on sheets of stiff white paper bearing a label giving the name, type of situation in which the plant is found, where collected, when, and by whom. These mounted plants are then arranged in some orderly fashion to make convenient the finding of desired specimens. Since insects are apt to eat dried plants, they are usually kept in closed spaces in which they may be exposed to fumes of insect repellents.

To collect plants for preservation is not a formidable process. The plant hunter may carry a portfolio consisting of two sheets of press board, or of some other stiff material, held together by two straps. Between these covers, sheets of newspaper are carried, folded once, to receive the specimens. Since the usual size of paper used for mounting plants in an herbarium is $11\frac{1}{2} \times 16\frac{1}{2}$ inches, it is best to arrange the specimen, when it is placed in the collector, with this fact in mind.

If one wishes to keep his specimens, it is well to make notes while the plant is fresh, indicating colors, sort of place in which it was growing, location, and date. Thus, errors of memory are avoided.

On returning home, or soon after, the newspapers with their plants are laid between blotters and placed under pressure. If berries or bulky things are collected, soft pads of cotton batting, folded in paper, may be used between newspapers and the blotters to distribute the pressure and to protect soft structures.

If the blotters are changed daily at first, and at longer intervals later, the plants may often be dried out without great loss of color. The foliage and perhaps flower colors may also remain.

To mount the dried specimens, narrow strips of thin gummed tissue are placed across the plants in proper places to hold them to the sheets. The label usually goes in the lower right-hand corner of the sheets to which the plants are fastened.

As the collection grows, paper covers are used to keep together plants in the desired groups, such as species or genera. In time, an active collector finds his herbarium a place in which he will spend many hours if he chooses, in arranging his plants and in recalling field experiences. There are usually pleasant memories in the herbarium work.

All of this sounds pretty formidable, perhaps, but the herbarium grows slowly and with it the demand on time and other resources.

The herbarium of one of the well-known botanists of the west, when seen by the writer, was kept in a packing box filled with shelves and set on a table placed in an alcove off the kitchen. His plants, not mounted, were kept in the newspapers, with small projecting tabs indicating groups, such as genera, etc. Since he was a man of small means, this served his purpose, and later his collection came to be highly valued and had appropriate care.

PLANT COLLECTING TRIP

FOLLOWING CUSTOM, the Arboretum and the Department of Botany of the University of Pennsylvania, after the close of the school year, went on a botanical foray to a section of Pennsylvania not well represented in the University Herbarium.

The personnel consisted of members of the staff, graduate and undergraduate students majoring in botany. Wives of the members of the staff took charge of the commissary aspects of the situation, and tourist cabins were the characteristic stopping places. Botanists are never too particular about their surroundings, and the rough-and-ready appearance of the group suggested the character of the work.

About a week was spent in collecting in Carbon, Luzerne, Lackawanna and Susquehanna Counties. Last year, on a similar expedition, Wayne and Pike Counties chiefly were investigated. Various botanical interests represented in this bus party brought in a wide variety of types of vegetation.

Professor John M. Fogg, Jr., Taxonomist of the Arboretum, who was an active member of the party, has kindly sketched the most interesting botanical features of the trip:

"The first day was spent in exploring the summit and slopes of the Blue Mountains at Little Gap. As these mountains here form the boundary line between two counties, the party was split into two groups, one unit collecting on the northern or Carbon County slope, and the other covering the southern face which is in Northampton County. The southern party met with a rather uniform flora of mixed, deciduous woodland, with little of real interest, but the Carbon County group found a vegetation that was characterized by a strong Canadian element. Among the many significant plants found were Fire Cherry (*Prunus pennsylvanica*), Striped Maple (*Acer pennsylvanicum*), and Round-leaved Dogwood (*Cornus circinata*). All of these are far-ranging northern species, which are seldom found south of the Blue Mountains in Pennsylvania. They provided a reliable sample of the type of vegetation which the party was to encounter during the remainder of the trip. One of the most interesting and widespread plants seen here was the Fly Poison (*Amianthium muscaetoxicum*), which made almost as spectacular a show as at the station in Pike County, visited by the 1936 bus trip.

"The following day, June 24th, was devoted entirely to Carbon County, an attempt being made to examine as many different habitats as possible. The first stop was at the foot of Flagstaff Mountain in Mauch Chunk, which yielded, among other species, the Red-berried Elder (*Sambucus racemosa*), already in young fruit. Considerable time was spent in the Bear Creek Swamp, near Christmans. A few of the more noteworthy finds made here were Goldthread (*Coptis groenlandica*), Painted Trillium (*Trillium undulatum*), Dwarf Raspberry (*Dalibarda repens*), Bunch berry (*Cornus canadensis*), and a rare species of Jack-in-the-pulpit (*Arisaema Stewardsonii*), which differs from the common woodland form (*A. triphyllum*) chiefly in its beautifully fluted spathe.

"The scene of activities then shifted to an area northeast of Albrightsville. Here the scientific personnel was divided into three sets. One unit ascended Lake Mountain and brought back Mountain Ash (*Sorbus americana*) and Bunch Berry. A second group explored the shores of Grass Lake and found Sweet Gale (*Myrica Gale*), Mountain Holly (*Nemopanthus mucronata*), Rhodora (*Rhododendron canadense*) and Bog Laurel (*Kalmia polifolia*). The third party made a quick dash to Round Pound and back, bringing with them Stiff Clubmoss (*Lycopodium annotinum*), a Quillwort (*Isoetes Braunii*) and a Bladderwort rare to this part of the state (*Utricularia purpurea*). They had also found, at the only station discovered by the party in Carbon County, an interesting northern member of the lily family, *Clintonia borealis*.

"On June 25th, the party made the ascent of Penobscot Knob in Luzerne County, primarily for the purpose of collecting a rare northern species of Cinquefoil (*Potentilla tridentata*). This plant, which has long been known to occur in this locality, has been reported from but two other stations in Pennsylvania. It was found here in great profusion on the bare rocky summit of Penobscot Knob at an altitude of about 2200 feet. It was in full bloom on this date, its attractive white flowers making a splendid show. The summit of the mountain was also dotted with Fly Poison and the delicate little Harebell (*Campanula rotundifolia*). The entire vegetation here was dwarfed and stunted, and a baffling array of oaks, blueberries and service-berries was collected for careful study.

"The party was joined in Scranton that evening by Mr. Stanley L. Glownenke, who acted as guide for the remainder of the trip. The first collecting on Saturday, June 26th, was done along the south branch of the Tunkhannock Creek, near Montdale, in Susquehanna County. Among the novelties found here were Mountain Sorrel (*Oxalis montana*), Acute-leaved Hepatica (*Hepatica acutiloba*) and Red Raspberry (*Rubus idaeus*, var. *strigosus*).

"The climax of the whole expedition came with the ascent and exploration of the Elk Mountains, which occupied the remainder of the day. These mountains, which are the highest in northeastern Pennsylvania, are heavily wooded and extremely wild. Here again the party broke up into groups in an endeavor to cover as wide a territory as possible. Lack of space forbids mention of all but a few of the many exciting discoveries made on the two knobs and richly wooded slopes of the Elk Mountains. Probably the most significant species were two rare orchids (*Habenaria hyperborea* and *H. orbiculata*) found in some abundance at the foot of the South Knob. Rivaling these in their interest for the botanist were two species of grasses, never before collected in this part of the State. The Red Baneberry (*Actaea rubra*), seen nowhere else on the trip, was abundant here, together with Large-flowered Trillium (*T. grandiflorum*) and Oak Fern (*Phegopteris Dryopteris*). The region yielded many species new to Susquehanna County, and at least two apparently new to the State.

"This ended the intensive collecting of the expedition, although a few brief stops on the way back to Philadelphia were made in Monroe and Northampton. In all over a thousand numbers were collected, many of them in duplicate or in triplicate,

furnishing a bulk of material which will go far toward increasing our knowledge of the flora of northeastern Pennsylvania."

The cost of the expedition was reduced to a minimum, and those of the party who enjoy plant study in the open found not only scientific results, but also something of the vacation spirit. By having an orderly plan of exploration, we shall be able to widen and deepen our knowledge of the wild flora of Pennsylvania.

Botanists in pursuit of plants almost necessarily reach out-of-the-way places, and the highlands of Pennsylvania and its rugged scenery are much better appreciated after one has viewed it from Penobscot Knob, near Wilkes-Barre, and from Elk Mountain, in Susquehanna County. The botanist's attention is not altogether monopolized by what he finds growing at his feet.



ARBORETUM NEWS

Scientific Staff

During the past summer, members of the scientific staff of the Arboretum were engaged in a variety of activities in the field and at home.

DR. H. H. YORK, Pathologist, continued his investigations on the forest diseases of New York, his work being mainly concentrated at Spring Water, New York.

DR. E. T. WHERRY, Ecologist, taught a class in botany in the Summer School of the Rocky Mountain Biological Laboratory, in Gunnison County, Colorado. He spent much time in collecting the ferns of Colorado, visiting a majority of the counties of the state in his work.

DR. J. M. FOGG, JR., Taxonomist, taught a class in botany at the Mountain Lake Summer School of the University of Virginia, at Mountain Lake, Virginia. He collected actively for the Herbarium, bringing back approximately a thousand plants.

DR. CONWAY ZIRKLE, Geneticist, spent his summer in Philadelphia, and continued his cytological studies in the laboratory at the Arboretum.

The Director, DR. R. H. TRUE, spent several weeks in Maine, where he collected actively for the Herbarium. Much material came from a botanizing trip to Moosehead Lake and the vicinity of Mt. Katahdin.

Improvements at the Arboretum

During the summer much-needed work was done at the Arboretum.

Five of the principal buildings received a fresh coat of paint.

The board fence around the Farm has been replaced by a four-rail fence with concrete posts.

The scientific equipment of the Arboretum has been greatly improved by the purchase of modern apparatus for weather observation. After proper installation, the following observations can be carried on: Temperature, relative humidity, wind velocity, rain and snowfall, and barometric pressure. It is hoped that a more accurate knowledge of these conditions may contribute to the scientific work of the place.



WINTER LECTURES

THE Lecture Course at the Morris Arboretum for the coming winter season will deal with plants in various types of ornamental groupings. The speakers are well-known authorities in their several lines. As heretofore, summaries of the lectures will be printed in the Bulletin. The program follows:

December 11, 1937

DR. EDGAR T. WHERRY

Native Plants for our Gardens

Dr. Wherry is a well-known contributor to horticulture from the Botanical Department of the University of Pennsylvania. He will give some attention to Rock Gardens and Wall Gardens.

January 8, 1938

MR. A. F. W. VICK

Wild Gardens

Mr. Vick has been actively developing this special phase of Botany for some time, and his work has been seen at the Philadelphia Flower Shows.

February 12, 1938

MRS. HOLLIS WEBSTER

Herb Gardens

Mrs. Hollis Webster, of Lexington, Massachusetts, will speak on Herb Gardens, a matter on which she has frequently lectured.

March 12, 1938

MR. CHARLES L. TRICKER

Water Gardens

Mr. Charles L. Tricker, of Saddle River, New Jersey, will speak on Water Gardens, a subject with which the name of Tricker has long been associated.

April 9, 1938

MR. ROBERT S. STURTEVANT

Beds and Borders

Mr. Robert S. Sturtevant, of Groton, Massachusetts, a well-known landscape architect, will speak on Beds and Borders, covering perhaps the more usual types of planned ornamental groupings.

The lectures will be given in the auditorium of the Morris Arboretum, at Chestnut Hill, on the second Saturday of each month, at 2:30 o'clock. All will be illustrated in one way or another. Admission is free, and cars may be parked opposite the entrance on Meadowbrook Lane.

